



STATE OF WASHINGTON  
WASHINGTON STATE BOARD OF HEALTH  
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November 10, 2004

**TO:** Washington State Board of Health Members

**FROM:** Tom Locke, Board Chair

**RE: UPDATE ON LEAD AND OTHER CONTAMINANTS IN SCHOOL DRINKING WATER**

**Summary**

Information about the presence of lead and other contaminants in school drinking water has received considerable public attention in recent months. In particular, evidence of elevated lead and cadmium levels has been found in water from drinking fountains in schools within the Seattle Public School District. These findings raised concern about the adverse health effects associated with lead and cadmium and other elements that may be present in drinking water. In September 2004, Governor Gary Locke made \$750,000 in funds available to elementary schools throughout the state for testing their drinking water.

Today the Board will hear from a panel of experts on this issue. The purpose of the panel is to convey the scientific and regulatory issues as well as the concerns of parents and school officials with respect to lead and other contaminants in school drinking water. Dr. Steve Gilbert will explain the adverse health effects of lead. Dr. William Robertson will describe the epidemiology of lead toxicity and scientific controversies regarding lead exposure. Dr. Mark Cooper will describe his experiences as a parent of children attending public schools in which elevated levels of lead and cadmium were found in the drinking water. Denise Clifford from the Department of Health's Office of Drinking Water will review federal and state regulations, guidelines, and non-regulatory programs related to drinking water.

**Recommended Board Action**

After review and discussion of the information presented, the Board will determine whether further action on school drinking water is warranted.

**Background**

Elevated blood lead levels (BLL) are associated with irreversible neurological damage that can lead to impaired mental development, IQ deficits, learning disabilities, behavioral problems, short attention spans, and low birth weight in children. In 1991 the Centers for Disease Control and Prevention defined an elevated BLL as >10 micrograms per deciliter ( $\mu\text{g}/\text{dl}$ ), however evidence exists that adverse health effects occur at BLLs lower than 10  $\mu\text{g}/\text{dl}$ . Children under age 6 years are most vulnerable to the effects of lead exposure. Data indicate that elevated BLLs (those above 10  $\mu\text{g}/\text{dl}$ ) are very rare in Washington State; little is known, however, about the prevalence of BLLs below 10  $\mu\text{g}/\text{dl}$ . The effect of BLLs lower than 10  $\mu\text{g}/\text{dl}$  is controversial and several studies are ongoing. A study published in 2003 suggests that blood lead concentration is inversely and significantly associated with IQ. The study shows that the most dramatic decline in IQ appears to occur in the first 5  $\mu\text{g}/\text{dl}$  increase in blood lead level.

Children are primarily exposed to lead through lead-contaminated paint, dust, and soil. Drinking water is the source of approximately 20 percent of the lead to which children are exposed. Lead in drinking water can come from three primary sources: corrosion of water mains (also known as lead service lines); corrosion of lead from plumbing and fixtures; or high concentrations of lead in the source water (extremely rare).

Elevated levels of lead and cadmium were found in drinking water collected from a Seattle Public School in November 2003. Since then, district-wide testing has been conducted in Seattle Public Schools. These tests identified several more schools in which water from one or more drinking water sources exceeded the action level set by the Environmental Protection Agency (EPA) of 20 parts per billion (ppb) for lead. The tests also revealed elevated levels of other contaminants such as cadmium. Data from the tests can be viewed online at the Seattle Public Schools Web site:

[http://www.seattleschools.org/area/facilities/WaterQuality/water\\_quality\\_reports.htm](http://www.seattleschools.org/area/facilities/WaterQuality/water_quality_reports.htm).

The recognition that several schools within the Seattle Public School district had elevated levels of lead and other contaminants raised concern that schools throughout Washington State might have similar circumstances. To encourage schools to conduct tests on their drinking water, Governor Locke released \$750,000 in funds to elementary schools throughout the state in September 2004. To date, at least one other school district has conducted tests on drinking water. The Northshore School District recently completed a round of testing for lead in drinking water at 18 schools and found that 7 percent (36) of the sites tested exceeded the EPA action limit of 20 ppb. Shoreline Public Schools also recently released test results from half the drinking fountains and faucets in their schools. These tests indicate that 9 percent of drinking fountains exceeded either the federal limit for copper or the Shoreline Public Schools limit of 10 parts per billion for lead. It is not known how many other schools throughout the state have elevated lead levels or other contaminants in their drinking water.

In Washington State, schools that operate their own water wells are considered a public water system and are required to test their water periodically. However, schools that receive their water from a public utility are treated like private residences and are not required to conduct tests. Public utilities are required to test the water that they distribute to their customers to ensure that the water delivered to the building meets specific requirements. Once water enters a building and travels through the plumbing system, it is no longer regulated. If schools choose to test their drinking water, the EPA has set action level guidelines for certain contaminants. For example, the action level for lead in school drinking water is 20 ppb. The action level for lead in drinking water from a public water system is 15 ppb. The differences in action levels can be attributed to testing purposes and methodologies. Testing protocols designed for school drinking water are intended to identify specific taps or fountains that have problems while protocols for public water systems are intended to detect system-wide problems.

The Lead Contamination Control Act (LCCA) of 1988 required states to establish programs to assist schools and day care facilities to test for and remedy lead contamination problems and make testing results available to the public. A 1996 court decision made this mandate illegal and states are no longer required to establish testing programs for schools. While there are no requirements for schools in Washington State to test drinking water, the Department of Health directs schools to comply with drinking water regulations through a component of its School Health and Safety Program. Schools that do conduct testing are not required to report the results to the health department, but they are required to make the results available to parents.

Other states have used a variety of approaches to address the issue of lead and other contaminants in school and day care facility drinking water. For example, Florida requires that public water systems include a day care facility site when they conduct tests as required under the federal lead and copper rule. Connecticut requires that water supplies in day care facilities are tested every two years for lead content and that the results are submitted to the local and state health departments. Many states, including Washington, implement education programs targeted at schools to encourage school administrators to conduct tests on drinking water and to inform them of the dangers associated with elevated lead levels.